THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 54

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID S. BREED

Appeal No. 97-1544
Application 08/358,976[1]

ON BRIEF

Before MEISTER, FRANKFORT and STAAB, Administrative Patent Judges.

FRANKFORT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's refusal to allow claims 1, 2, 5 through 7, 12, 13 and 20 through 27 as

[1]Application for patent filed December 19, 1994. According to appellant, this application is a continuation of application 08/104,246 filed August 9, 1993, which is a continuation of application 07/727,756, filed July 9, 1991.

amended subsequent to the final rejection in a paper filed February 12, 1996 (Paper No. 45) and from the final rejection of claim 28. Claims 1, 2, 5 through 7, 12, 13 and 20 through 28 are all of the claims remaining in the application. Claims 3, 4, 8 through 11 and 14 through 19 have been canceled.

Appellant's invention is directed to a switch crush sensor for use in a vehicle to detect whether a crash involving the vehicle is severe enough to warrant or require deployment of an occupant restraint system such as an airbag or seat belt tensioner. Independent claims 21, 23 and 28 are representative of the subject matter on appeal and a copy of those claims is attached to this decision.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Koenig 3,694,600 Sep. 26, 1972

Matsui et al. (Matsui) 3,859,482 Jan. 07, 1975

Claims 1, 2, 5 through 7, 12, 13, 20 through 23 and 28 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Matsui.

Claims 24 and 25 stand rejected under 35 U.S.C. § 103 as being unpatentable over Matsui.

Claims 26 and 27 stand rejected under 35 U.S.C. § 103 as being unpatentable over Matsui in view of Koenig.

Rather than reiterate the examiner's full statement of the above-noted rejections and the conflicting viewpoints advanced by the examiner and appellant regarding those rejections, we make reference to the examiner's answer (Paper No. 49, mailed August 1, 1996) for the examiner's reasoning in support of the rejec-tions, and to appellant's brief (Paper No. 48, filed May 15, 1996) and reply brief (Paper No. 50, filed October 2, 1996) for appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to appellant's specification and claims,

to the applied prior art references, and to the respective positions articulated by appellant and the examiner. As a consequence of our review, we have made the determinations which follow.

As a preliminary matter, we note appellant's three groupings of the claims set forth on page 11 of the brief and have selected the independent claim (i.e, claim 21, claim 23 and claim 28) of

each respective grouping as being representative. Per appellant's groupings, claims 1, 2, 5 through 7, 12, 13, 20 and 22 will stand or fall with claim 21, while claims 24 through 27 will stand or fall with claim 23. Claim 28 will stand or fall alone.

Turning first to the examiner's rejection of claim 23 under 35 U.S.C. § 102(b) based on Matsui and using the language of appellant's claim 23 as a guide, we note that Matsui discloses a tape switch crash sensor (col. 7, lines 50-53, e.g., Figs. 15a, 15b) in combination with a vehicle (e.g.,

Fig. 21a) for sensing that the vehicle has been in a crash and has, at least in part, been crushed. The combination in Matsui comprises: a) a tape switch containing first and second electrically conductive members (95, 95N), with said switch having a length dimension at least an order of magnitude larger than both its width and its thickness (see, e.g., col. 12, lines 19-23, and col. 18, lines 51-54), the first and second electrically conductive members (95, 95N) being substantially parallel to said length dimension, and wherein said switch actuates on bending (i.e., bending of the first conductive member into contact with the second conductive member); b) cover means (97, 99) for reducing the sensitivity of

said tape switch; c) means for mounting said switch in a crush zone of said vehicle (col. 19, lines 6-9 and Fig. 21a); and d) mechanical means (133, 133a of Figs. 21a, 22a) for contacting and applying a bending force to said switch upon portions of the vehicle being crushed in the crush zone to cause said first conductive member to be displaced relative to said

second conductive member to cause said switch to change from a noncon-ducting state to a conducting state, and wherein said switch latches during said crushing due to the plastic deformation of the metal cover means (99) upon being subjected to a compressive force from the pressor member (133, 133a) exceeding a predeter-mined magnitude. Thus, we must conclude that this combination in Matsui anticipates that set forth in claim 23 on appeal.

Appellant urges (brief, pages 16-17) that the term "bending" as used in the application on appeal is substantially different than the "bending" that the switch of Matsui will undergo. Giving the language of claim 23 on appeal its broadest reasonable inter-pretation consistent with appellant's specification, we can not agree with appellant's more limited assertions regarding the definition of "bending" as used in claim 23. Like the embodiment

seen in Figure 5 of the present application, we observe that

the switch in Matsui (e.g., Figs. 15a, 15b mounted as in Fig. 21a) will be struck by vehicle structure (e.g., 133, 133a) displaced by the crushing of a portion of the vehicle in a crash and be deformed or "bent" as a result of that contact so that the first conductive member (95) is displaced relative to said second conductive member (95ℕ) to cause said switch to change from a nonconducting state to a conducting state. Appellant's specifi-cation, at page 11, lines 6-7, in reference to Figure 5, appears to support this general understanding of "bending" as it applies to the switch member seen therein. Stated simply, in contrast to appellant's arguments, claim 23 on appeal is clearly not limited to the mounting arrangement and type of switch "bending" as depicted in the embodiment of the invention seen in Figure 6 of the application, but is instead subject to the broader interpre-tation applied by this panel of the Board supra.

For the above reasons, the examiner's rejection of claim 23 under 35 U.S.C. § 102(b) based on Matsui will be sustained. Given appellant's above-noted grouping of the claims, claims 24 through 27 will fall with independent claim 23 from which

they

depend, and the examiner's rejections of such claims under 35 U.S.C. § 103 will thus also be sustained.

Looking next at the examiner's rejection of independent claim 28 under 35 U.S.C. § 102(b) based on Matsui, we share the examiner's view that Matsui (as discussed above) discloses a switch type crash sensor as set forth in appellant's claim 28 on appeal. In this instance, we observe that the tape switch of (Figs. 15a, 15b) mounted directly to and across the entire extent of the frame member (129) of Figure 21a (as in col. 23, lines 56-65, of Matsui) comprises an actuating member as set forth in clause a) of claim 28; a cover means (99, 97) for reducing the sensitivity of said tape switch such that "at least a twenty pound force" is required to cause said switch to bend along its length (see col. 6, lines 15-19), with said bending causing the first conductive member (95) of the switch to contact the second conductive member (95N) thereby causing said switch/sensor to change from a nonconducting state to a

conducting state. The sensor of Matsui (Fig. 15b, col. 19, lines 6-9) includes means for mounting the switch "lengthwise to two portions of the

vehicle which are likely to experience relative motion during a

crash of sufficient magnitude that airbag deployment would be required" (note particularly Figure 21a and the disclosure at col. 23, lines 56-65 and col. 24, lines 7-30). In this regard, we note that a sensor mounted directly to and across the entire extent of the frame member (129) of Matsui would be mounted "lengthwise to two portions of the vehicle which are likely to experience relative motion," that is, "lengthwise to" the bumper (130) and frame member (129), so that upon a crash of sufficient magnitude, said portions of the vehicle (130, 129) experience said relative motion and result in the actuating member being bent, whereupon the conductive members (95,95N) make contact with each other and the sensor changes from a nonconducting state to a conducting state enabling airbag deployment.

In response to appellant's arguments on pages 17-19 of the brief, we point out that claim 28 on appeal is not limited to the particular mounting arrangement and specific type of switch "bending" depicted in the embodiment of the invention seen in Figure 6 of the application, but is instead subject to the broader interpretation applied above by this panel of the Board.

Contrary to appellant's arguments, this claim does not recite or require that the sensor bend "as a result of the motion of one portion of the vehicle to which the sensor is mounted relative to another portion of the vehicle to which the sensor is mounted" (brief, pages 17-18).

For the above reasons, the examiner's rejection of claim 28 under 35 U.S.C. § 102(b) based on Matsui will be sustained.

The last claim for our consideration with regard to the examiner's § 102(b) rejection based on Matsui, is independent

claim 21. This claim differs from claims 23 and 28 in that it requires the sensor to be arranged in the crush zone "at a given position" and "attached to at least one of said vehicle elements in said crush zone," with the switch of the sensor and the at least one of said vehicle elements cooperating "such that when said at least one of said elements deforms at said given position upon said impact at at least said prescribed threshold-value speed, bending of said actuating member (in said switch) inten-tionally occurs resulting in actuation of said switch." As argued by appellant on pages 13-15 of the brief and in the reply

brief, the more specific requirement in claim 21 of the cooperating relationship between the sensor/switch and the vehicle element to which it is specifically attached at a given location to cause bending of the actuating member of the switch is not found in Matsui. Contrary to the examiner's position (answer, pages 7-8), we do not consider that the recitations in appellant's claim 21 noted above are merely intended use, or that the sensor in Matsui (Figs. 15a, 15b)

can be fairly said to be capable of inherently actuating upon being bent in the manner set forth in claim 21 on appeal. We view the above recitations of claim 21 as providing a structural relationship which must be capable of cooperating so as to bend the actuating member of the switch when the at least one vehicle element to which it is mounted is bent at said given position. No such arrangement is shown, disclosed or taught in Matsui. Thus, the examiner's § 102(b) rejection of claim 21 and claims 1, 2, 5 through 7, 12, 13, 20 and 22 which depend therefrom will not be sustained.

In summary: the decision of the examiner rejecting claims 1, 2, 5 through 7, 12, 13, 20 through 23 and 28 under 35 U.S.C.
§ 102(b) as being anticipated by Matsui, has been affirmed as to

claims 23 and 28, but reversed with regard to claims 1, 2, 5 through 7, 12, 13, 20, 21 and 22. The examiner's decision rejecting claims 24 and 25 under 35 U.S.C. § 103 as being

unpatentable over Matsui and claims 26 and 27 under 35 U.S.C. § 103 as being unpatentable over Matsui in view of Koenig has been affirmed. Thus, the decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

JAMES M. MEISTER Administrative Patent Judge	)	
CHARLES E. FRANKFORT Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
LAWRENCE J. STAAB Administrative Patent Judge	)	

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